

PATENT SPECIFICATION

DRAWINGS ATTACHED

937.956



Date of Application and filing Complete Specification: Sept. 14, 1961.

No. 33079/61.

Application made in Canada (No. 829,114) on Aug. 4, 1961.

Complete Specification Published: Sept. 25, 1963.

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Index at acceptance:—Classes 94(2), E2K1; and 94(1), C(12E:15A).

International Classification:—B65d. (B65b).

COMPLETE SPECIFICATION

Dispensable Bags

We, THE PAUL MOORE COMPANY LIMITED, a company incorporated under the laws of the Province of Manitoba, of 171, Market Avenue East, Winnipeg, 2, Manitoba, Canada, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to thermoplastic film material of predetermined length and width, transversely divided along its length into a plurality of individual and separate compartments, each of which is adapted to be detached from the remainder to form an individual open-ended bag.

It is the principal object of the present invention to provide a plurality of readily dispensable integrally connected individual compartments each of which is adapted, when detached from an adjoining compartment, to form an individual bag particularly suitable for household use.

A further object is to provide such integrally connected compartments which are relatively easily and cheaply manufactured.

A still further object is to provide a plurality of integrally connected individual compartments which are readily separable into individual bags purely upon the application of a tensile force.

A still further object is to provide a plurality of such compartments each of which, when detached from an adjoining compartment, provides an individual bag having one open edge for filling purposes.

The provision of a plurality of integrally connected thermoplastic compartments each of which, when detached from an adjoining compartment, forms an individual bag, is known but such compartments are formed by transversely heat sealing a tubular member at spaced intervals. To form an individual bag from such a member, it is required that the member be cut adjacent to the transverse heat

sealing and such cutting thereby provides the bag opening. The cutting may be performed by hand scissors when the user requires an individual bag or the tubular member may be provided with a plurality of weakened transverse separation lines whereby one compartment can be detached from an adjoining compartment of the tubular member.

It is also known to form a plurality of interconnected bags from a single sheet of thermoplastic material by folding the sheet longitudinally upon itself and thereafter transversely heat sealing the folded strip at predetermined intervals. The resultant product is a plurality of interconnected bags, each of which has one open edge. There is also, as in the formerly mentioned prior art, the disadvantage of having, thereafter, to cut along the transverse heat seal in order to separate one bag from an adjoining bag.

The disadvantages of providing such a plurality of separable compartments is readily apparent in that a cutting operation is required in the first instance to form each bag which cutting also detaches it from the next adjoining compartment, and in the later instance, to separate one compartment from the adjoining compartment. The disadvantage in common to both aforementioned types of prior art is that to form a separate bag, two separate and distinct operations are necessary, one being the cutting operation and the second being the steps of heat sealing the thermoplastic material at the predetermined spaced intervals. These disadvantages are overcome by the present invention.

Accordingly, the present invention relates to a plurality of integrally connected compartments of thermoplastic material comprising a pair of upper and lower panels, each of predetermined thickness, integrally connected together longitudinally and provided with a plurality of transverse predetermined spaced fused joints each of a thickness less than the sum of the thicknesses of said pair of panels

[Price 4s. 6d.]

and each forming a rupturable weakened transverse seal, each of said compartments being adapted to be separated from the remainder of said compartments solely by rupture of its associated transverse seal along an associated

5 said fused joint to form a bag having three closed edges and one open edge.

The invention is illustrated, by way of example, in the accompanying drawings, in which:—

10 Fig. 1 is a diagrammatic perspective view illustrating the formation of a plurality of integrally connected compartments from a continuous strip of thermoplastic material;

15 Fig. 2 is a longitudinal section, on an enlarged scale, taken on the lines 2—2 of Fig. 1;

Fig. 3 is a diagrammatic perspective view illustrating an alternative formation of a plurality of interconnected compartments formed from two individual strips of thermoplastic material;

20 Fig. 4 is a diagrammatic perspective view illustrating a plurality of integrally connected compartments being fed from a roll dispensing container.

25 Referring now in detail to the drawings, and in particular to Fig. 1, a strip of predetermined thickness of monofilament thermoplastic material 10, such, for example, as polyethylene, is fed from a supply reel 11 in a direction indicated by the arrow and around a rotating wheel 12 which folds the strip upon itself into an upper panel 13 and a lower panel 14, which are coextensively joined along a mutual marginal side edge 15.

30 A pair of co-operating movable pressure and heating bars 16, located with the panels 13 and 14 therebetween, are adapted to be brought together at spaced intervals, transversely to the strip to fuse the upper and lower panels 13 and 14 respectively together to provide a plurality of transverse predetermined spaced fused joints 18 each of a thickness less than the sum of the thickness of said upper and lower panels 13, 14 and so as to provide a plurality of integrally connected compartments open along the marginal edge 17.

35 As seen in Fig. 2, the heat sealing is such that the heat joint between two adjacent compartments has a central reduced thickness "A", (less than the thickness of a panel), providing a weakened portion along which one compartment may be readily separated from the next adjoining compartment without damage to either compartment, merely by pulling one with respect to the other. The thickness indicated at "A" preferably is less than the thickness "B" of an individual panel.

40 A separate compartment is so formed which, when separated from an adjoining compartment, forms an individual bag consisting of a pair of opposite side walls 13 and 14 interconnected along the marginal edge 15 and heat sealed at opposite sides 18. As previously mentioned, the marginal edge 17 is open and

accordingly a bag having three closed sides and one open side is formed in one operation.

These integrally connected compartments may be rolled upon a suitable spool 19, (see Fig. 4), confined within a container 20 having a slot 21 therein through which they may be dispensed or they may be packaged in a zig-zag manner for dispensing.

70 A modified form of the invention is illustrated in Fig. 3 wherein a pair of separate upper and lower panels 13a and 14a of thermoplastic material are fed from respective supply reels 22 and 23, in a direction indicated by the arrow, into a heat and/or pressure sealing arrangement indicated generally at 24. The sealing arrangement 24 consists of a heated central disc 25 continuously in contact with the pair of panels between their longitudinal marginal edges. Rotating with the disc 25 are a pair of oppositely disposed shafts 26 and 27 each having an axial rib adapted periodically to contact the panels and thus fuse them together at spaced transverse intervals. The resultant product consists of a pair of upper and lower panels 13A, 14A integrally connected together by a longitudinal heat joint 28 located between the marginal side edges of the panels and provided with a plurality of transverse predetermined spaced fused joints 18A, the thickness of said joints 18A and 28 being less than the sum of the thickness of said pair of panels, the arrangement providing a pair of parallel rows D, E of separable bags.

80 From the foregoing, it may be readily seen that a plurality of interconnected monofilament thermoplastic compartments are provided which are relatively easily formed in one operation and readily separable into individual bags having one open edge for filling purposes.

WHAT WE CLAIM IS:—

1. A plurality of integrally connected compartments of thermoplastic material comprising a pair of upper and lower panels, each of predetermined thickness, integrally connected together longitudinally and provided with a plurality of transverse predetermined spaced fused joints each of a thickness less than the sum of the thicknesses of said pair of panels and each forming a rupturable weakened transverse seal, each of said compartments being adapted to be separated from the remainder of said compartments solely by rupture of its associated transverse seal along an associated said fused joint to form a bag having three closed edges and one open edge.

2. An arrangement according to Claim 1 wherein said panels are integrally connected together longitudinally along one marginal side edge by a common fold line.

3. An arrangement according to Claim 1 wherein said panels are integrally connected together longitudinally along one marginal side edge by a heat seal.

4. An arrangement according to Claim 1

wherein said panels are integrally connected together longitudinally by means of a heat joint located between the free marginal side edges of said panels.

5 5. An arrangement according to Claim 1 wherein said panels are integrally connected together longitudinally by means of a heat joint located substantially midway between the free marginal side edges of said panels.

10 6. An arrangement according to any of the preceding claims wherein the thickness of each of said heat joints is less than the thickness of a said panel.

7. An arrangement according to any of the preceding claims wherein said thermoplastic material is polyethylene. 15

8. A plurality of integrally connected compartments of thermoplastic material substantially as described with reference to and as shown in the accompanying drawings. 20

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Leamington Spa: Printed for Her Majesty's Stationery Office, by the Courier Press
(Leamington) Ltd.—1963. Published by The Patent Office, 25 Southampton Buildings,
London, W.C.2, from which copies may be obtained.

